**Global Poverty and Inequality:**

**Are the revised estimates open to an alternative interpretation?**

Peter Edward

Lecturer in International Business

Newcastle University Business School

5, Barrack Road, Newcastle upon Tyne NE1 4SE

Tel: +44 (0)191 208 1599

E-mail: peter.edward@ncl.ac.uk

Andy Sumner

Reader in International Development

King's International Development Institute

King's College London

Strand, London, WC2R 2LS

Tel: +44 (0)207 848 1514

E-mail: andrew.sumner@kcl.ac.uk

**Abstract:** The level of, and trends in, global inequality and global poverty are indicative assessments of who has benefited from economic growth. The revision of price data has led to a reassessment of those estimates. Through an extensive overview of the implications, we argue that the data can be read in different ways. Quasi-official estimates show global extreme poverty and global inequality are considerably lower than previously thought. We argue that these changes are much less significant than they at first appear and we present a more nuanced alternative interpretation by exploring changes across the entire global distribution.

## 1. INTRODUCTION

The release of new price data for purchasing power parity (PPP) has led to new "official" estimates of global poverty and inequality. Initial interpretations of those estimates were that global poverty and global inequality were lower than previously thought. When the old extreme poverty line ($1.25-per-day) was applied to the new 2011PPP data it gave much lower estimates of global poverty than the old 2005PPP data. Initially this gave rise to the suggestion that global growth in recent decades had been much better for the poorest than previously suspected. Subsequently, the World Bank has argued that a poverty line of around $1.9 is more appropriate as an equivalence to the old $1.25 extreme poverty line.

In this paper we present an alternative comparison of the impact of global growth since 1990 on global poverty and inequality, using the 2005 PPP rates and the 2011 PPP rates to we explore where and by how much the PPP rate revisions have changed our understanding of who benefitted from global growth in recent decades. The new contribution of our paper is to focus on the impact of the new PPPs on estimates of global consumption, global inequality and global poverty using a consistent approach and doing so over the entire period since the Cold War, not only the most recent period, and over the entire global distribution.[1]

We argue that apparently sizeable differences at the poorer end of the global consumption distribution arise as a result of the hyper-sensitivity of extreme poverty headcounts to relatively small changes in the effective poverty line, and therefore also to relatively small differences in the estimates of the PPP rates. This sensitivity of extreme poverty figures to modest changes in the underlying methodology is made

more apparent when one considers how little seems to have changed if only slightly higher poverty lines are considered. The most significant difference arising from the PPP revisions actually occurs at the upper end of the consumption distribution where the 2011PPP rates increased the share of growth to the higher percentiles.

We also demonstrate that, while the new PPP rates lead to lower absolute values for global inequality, conclusions about the relative trends over time in inequality remain broadly the same, namely that there have been some, quite modest, falls in global inequality between individuals but the level of inequality globally still remains very high.

Furthermore, by considering the revised and updated picture that recent PPP (and survey) data provides, we explore how longrun trends in consumption growth since 1990 have been distributed globally both before and after the 2007 financial crisis. At the global level it seems that the crisis has actually been quite good for all but the richest. However, the benefits of this appear to be quite strongly focused in just two economies (China and India). Once these are removed from the picture it appears that consumption growth of the poorest third of the population in the rest of the world fell below longrun averages, at least in the 2007-2012 period. Any sweeping conclusions that the 2007 crisis may actually have been good for the poor would rely on localized effects in India and China that disguise the fact that relative to longrun averages the crisis has not been good for the poor in the rest of the world through the 2007-2012 period.

Our paper is structured as follows: Section 2 discusses the revision of the PPPs and methodological contentions over their use for the estimation of global poverty and global inequality; Section 3 discusses and evaluates the extent to which the PPP revision generates a different picture of global poverty and global inequality; and

Section 4 concludes with a summary of what the alternative interpretation means for debates on the distribution of the benefits of economic globalisation since the Cold War.

## 2. THE NEW PURCHASING POWER PARITY CONVERSION RATES

Price comparisons between countries can be made with market exchange rates or PPP exchange rates. Market exchange rates can be misleading for some comparisons of consumption in different countries, since, for instance, the price of rice in China is very different to the USA. PPP exchange rates attempt to deal with this problem. This is done by comparing prices across countries for similar items in order to estimate how many US dollars it would cost to buy an equivalent basket of goods in the USA compared to the in-country cost of that basket of goods.

The International Comparison Programme (ICP), which was fully independent at its outset in the late 1960s but is now housed at the World Bank, is responsible for the collection and analysis of PPP data and for producing the "official" PPP rates. The most recent round of comparisons was made in 2011, updating previous PPP rates that had been estimated in 2005.

The use of the ICP PPP data is very pervasive in global statistics including for example, the 'official' global poverty estimates of the World Bank and numerous indicators in the World Bank's various economic datasets. There are, however, significant contentions over the robustness and relevance of the ICP data. For example, concerns have been raised over whether it is possible to develop a meaningful comparison basket of goods since what may be considered a staple

necessity in one country may be rarely consumed in another. Furthermore, some critiques have questioned whether a basket representative of average consumption habits (which necessarily includes a range of luxury items) is appropriate as a measure of the buying power of the poorest, who spend most of their money on basic foods and other necessary staples. This means that national average PPPs may not be adequate for estimating poverty.[2]

Such contentions with the PPPs are by no means new.[3] Not surprisingly, therefore, the 2011 round proved contentious from the outset, not least because it includes some substantial changes in developing countries that are of significance to global poverty and inequality. These debates were given renewed impetus by the new round of PPP estimates because the 2011 PPPs are 'sharply different' from what one might have expected based on extrapolation of the 2005 PPP round using relative inflation rates for each country.[4] This issue is associated with the aggregation method used in ICP 2005. In that round, the world was divided into regions and prices were collected and compared across participating countries in a region. The regions were then linked by comparing prices for a common 'ring list' of items in just 18 countries worldwide, with at least two countries taken from each region. This 2005 'ring list' included a large number of items that were only available in rich countries. For example, Cameroon, Kenya, Senegal, Zambia and Sri Lanka enumerators had to price a 2003 or 2004 vintage bottle of Bordeaux, a front-loading washing machine with a pre-specified spin speed, and a Peugeot 407 with air conditioning and climate control.[5] Such items are – of course – likely to be affordable only to a small proportion of the population and to cost relatively more in poor countries than in rich countries, leading to an overstatement of the price level in poor countries relative to rich countries. In the ICP 2011, in contrast, almost all participating economies

contributed to the interregional linking by pricing products in a global core list. The net result is that the 2005 PPP round may have over-stated consumption PPPs in Africa, Asia and Western Asia region by 20–30%.[6]

One final issue is that there are 'large, but largely unrecognized', standard errors relating to uncertainty on how relative prices and consumption patterns differ across countries.[7] They note, for example, that the standard errors are low (around 5%) for closely related countries such as the US and Canada or the US and Western Europe but standard errors are in the order of 20–30% for the US to India or US to China comparisons and larger for, say, Mali versus Indonesia, or Ethiopia versus China.[8] The implication of these errors, for poverty estimation purposes, is that it is important to recognize the potential sensitivity of poverty estimates to differences in PPP rates – or, to invert this, another way to approach the same issue in one's analysis is to recognize that when one assumes a given set of PPP rates, it is important also to reflect on the sensitivity of poverty estimates to different poverty line values (see later discussion).

In sum, the 2011 PPPs are by no means ideal but they are methodologically, in terms of data collection, stronger than the 2005 PPPs which had previously been used extensively for estimating global poverty and inequality. Consequently, and notwithstanding their limitations, the 2011 PPPs are almost certainly the best price data currently available on which to base estimates of global consumption poverty and inequality. Deaton and Aten are unambiguous that the 2011 round is superior to the 2005 round and that the 2011 round contains many methodological improvements over the 2005 round. They argue that the 2011 PPPs are 'the most accurate we have, and [we can] provide no ground for doubting them'.[9] It would thus seem reasonable to assume that Deaton's pertinent comment on ICP2005 holds for ICP2011:

> PPPs for the poorer countries in Africa or in Asia may be good enough to support global poverty counts, at least provided the uncertainties are recognized.[10]

Over the last decade the number of household surveys has certainly increased in frequency and a number of countries have upgraded their national accounts. Furthermore, to reiterate, the various pre-2011 PPPs *have* been used for global poverty estimates for about twenty-five years since the late 1980s, even though they are now recognized as inferior methodologically compared to the most recent 2011 PPP rates. We would thus argue that, rather than focus on calling into question the 2011 PPP rates, a better question to ask is under what conditions or with what caveats might it be reasonable to use the ICP 2011 for global poverty and inequality estimates? In view of the preceding discussion, we propose two conditions extending that of Deaton's citation above: first, that when estimates of global poverty (and inequality) are presented the inherent uncertainties should be clearly recognized and discussed at the outset, as we have done here; and second, that the estimates are not presented as single line estimates of global poverty (usually based on rather low poverty lines) but, instead, that a range of consumption lines should be considered to develop a more comprehensive understanding of global poverty.

## 3. OLD AND NEW ESTIMATES OF GLOBAL POVERTY AND GLOBAL INEQUALITY

### 3a. Aggregate output and consumption

To investigate independently of the official estimates what difference the PPPs make to global poverty and global inequality, a custom built dataset of global consumption is required. We refer henceforth to the dataset that we have constructed as the Growth, Inequality and Poverty (GrIP) dataset. The version used here is version 2.1. The dataset seeks to be a comprehensive model of global consumption distribution built of data drawn from the World Bank's PovcalNet, World Development Indicators, UNU WIDER's WIID3b and UNPD World Population Prospects. [11]

First, we consider how the new PPP data changed estimates of the size of the global economy in 2012.[12] If one uses the 2011 PPPs, the USA was still the largest economy in 2012 (GDP = $15.9 trillion 2011 PPP) and China the second largest (GDP = $14.9 trillion 2011 PPP) but the new PPP rates significantly narrowed the gap between these two countries. China's GDP was 94% of USA GDP using 2011 PPP, whereas it was 76% using 2005 PPP data – so that with the new PPP rates China's GDP exceeded that of the USA for the first time in 2014. India was the world's third largest economy (GDP = $6.1 trillion 2011 PPP) or 38% of USA by 2011 PPP versus 29% using 2005 PPP data. One of the biggest changes was to Indonesia (GDP = $2.3 trillion by 2011 PPP) whose economic size more than doubled if one uses 2011 PPP versus 2005 PPP, lifting it from 15$^{th}$ largest to 10$^{th}$ largest economy in the world, just slightly behind the United Kingdom

At a global level, world GDP (in 2012) was re-estimated from $73 trillion (2005 PPP) to $98 trillion (2011 PPP) and Household Final Consumption Expenditure (HFCE) from $39 trillion (2005 PPP) to $52 trillion (2011 PPP) (Table 1). What this

means is that since the end of the Cold War (1990 to 2012) rather than $37 trillion of new GDP generated (in 2005 PPP) the figure is estimated at $51 trillion new GDP (in 2011 PPP). In percentage terms, and irrespective of whether we use 2011 PPP or 2005 PPP or whether we consider GDP or HFCE, the size of the global economy doubled between 1990 and 2012 (and has grown further by almost 10% from 2012 to 2015). Global growth is slightly higher with the new set of PPPs because of the higher weight of faster-growing developing economies (notably China).

Table 1

These figures are all for national accounts (NA) totals. Of significance to global poverty estimates is what has happened to global consumption when measured by survey means. Here we find that, for the countries included in the dataset, consumption by survey means rises from $19 trillion in 1990 to $36 trillion in 2012 in 2011 PPP (versus $16 trillion and $27 trillion respectively in 2005 PPP). Survey data therefore indicate that global consumption grew by $17 trillion, or 47% (versus $12 trillion or 43% by 2005 PPP) which is rather slower than the NA growth rates but nevertheless it is $5 trillion more consumption growth than previously thought. This is substantially more than if 2005 dollars were simply inflated to 2011 dollars which, for example, for survey consumption could inflate $11.5 trillion of growth to $13.3 trillion whereas the 2011 PPP changes increased this figure by approximately $3.5 trillion .

Table 2

A number of developing countries saw substantial increases in HFCE as a result of the PPP revisions (Table 2). Some large developing countries of substantial importance to global poverty and inequality estimates (for example, China, India, Indonesia, Nigeria, Pakistan and Bangladesh) had large upwards PPP revisions the effect of which is to reduce estimated poverty levels at any given poverty line taking the estimates at face value (in reality of course nothing changed in peoples' lives on the ground). These revisions particularly affected countries that the World Bank classifies as 'middle income'. Regionally, the greatest changes were in sub-Saharan Africa due to a tripling of estimated consumption in Nigeria. A number of other sub-Saharan countries also saw substantial upwards revisions. For example, Tanzania saw a five-fold increase, Democratic Republic of Congo more than doubled, and Kenya increased by 70%. However, because these economies are much smaller than Nigeria's, in absolute terms it is the changes in Nigeria that dominate. The HFCE percentage increase in sub-Saharan Africa of 74% reduces to 47% if Nigeria is omitted (and to 38% if Tanzania, DR Congo and Kenya are also omitted).

The way that the 2011 PPP rates have increased the consumption in some large emerging economies means that, when survey consumption is considered, this growth has become quite closely focused geographically. For example, between 2010 and 2012 global consumption grew at just over $1 trillion a year (survey means, 2011 PPP) but as much as 43% of that growth was accounted for by China ($850bn) alone. The two fastest growing economies, China and India ($230bn), accounted for over 50% of the global survey consumption growth, while adding in the next two, Brazil and Russia ($185bn and $120bn respectively) reveals that over two-thirds of global

survey consumption growth in that period was concentrated in these four major emerging economies often referred to as the BRIC countries.

### 3b. The distribution of global consumption growth

Notwithstanding that the revised PPP rates have made some significant differences in absolute values of consumption, because these revisions apply to all years the revisions have a rather more modest impact on the relative distribution of the benefits of global growth since 1990. Figure 1 presents the global growth incidence curve for 1990–2012, illustrating the distribution of benefits using 2005 PPP and 2011 PPP (respectively the $12 trillion 2005 PPP or $17 trillion 2011 PPP of new survey consumption generated between 1990 and 2012). If one compares the entire 1990–2012 period, estimates of the distribution of benefits of economic growth differ relatively little across the poorer two-thirds of the world whether one uses 2005 PPP or 2011 PPP. Using 2011 PPP rates it appears that the poorest half of the global population have done slightly better than would be estimated using 2005 PPP rates. This might sound significant but in absolute terms it is still quite small. More significantly perhaps, those in the top third of the distribution appear to have fared rather better using the 2011 PPP rates than is implied by the 2005 PPP rates, and here these differences do amount to significant changes in absolute terms (Figure 2).

Figure 1

Figure 2

It is important to note that across the entire period from 1990 to 2015 a marked difference can be detected between the period prior to the 2007/8 financial crash and afterwards. In the period up to 2007 while global growth generally favoured (in relative, not absolute terms) the lower three-quarters of the global consumption distribution there were still not insignificant gains (both relatively and, of course, in absolute terms) that accrued to the richest quarter. The picture since 2007 is remarkably different. The poorest three-quarters globally have seen their consumption rise considerably faster than the longrun average (since 1990). But the richest quarter have fared relatively less well (Figure 3). Among the top 10% of global society (a group that in 2015 included, for example, 65% of the population of the USA and 53% of the population of the UK) consumption growth stalled entirely in the aftermath of the global crash.

However, as noted above, in recent years global consumption growth was predominantly accounted for by just two countries, China and India. When these countries are removed from the analysis it is apparent that this deviation from longrun growth rates is also largely confined to China and India (Figure 4). It seems that the 2007 crisis may actually have been better for the poor than the almost two-decades of global growth from 1990 to 2007 – but only if you were poor in one of the two emerging giants of China and India. Notably, if one considers the period 2007 to 2012 there are indications that, away from China and India, the poorest quarter of the world's population have seen consumption growth rates fall well below longrun averages as a result of the 2007 crisis (and, incidentally, that consumption levels in the richest quarter have reduced in absolute terms).[13]

Figure 3

Figure 4

### 3c. Trends in global inequality

To understand what impact these patterns of growth have had on measures of global inequality, we consider how the revised PPP rates have modified estimates of the global Gini coefficient. The GrIP dataset provides for an analysis of global inequality between all individuals in the world. This is the consequence of inequality between countries (as measured by mean consumption per capita) interacting with inequality between individuals within each country (as measured by national distributions of consumption). Changes in the PPP rates alter the relative weights of the between-country aspect of the Gini and so impact also on global inequality, but within-country Gini coefficients are independent of international comparator rates so are not affected by changes in PPP rates.[14] The 2011 PPP rates resulted in a reduction in estimates of global inequality across the period. However, this was due in large part to the increase (relative to the 2005 PPP rates) in aggregate consumption of many of the larger developing and emerging economies (as noted above). Once those differences arising from changes in the measurement methodology are accounted for, there is very little sign that the new PPP rates lead to any changes in the overall trends over time in global inequality.

Although the 2011 PPP rates generate lower estimates of global inequality, the levels of inequality are still high. In 2012, the global between-individuals Gini coefficient was 0.63 using 2011 PPP rather than 0.67 using 2005 PPP and global inequality between countries was 0.53 using 2011 PPP rather than 0.60 using 2005

PPP. This means that global inequality between individuals is similar to the level of inequality found between individuals in South Africa, while global inequality between countries is similar to the inequality between individuals in Brazil.

We estimate (Figure 5) a decline in global inequality since 1990. However, this reduction almost evaporates once China is removed from global inequality estimates (Figure 6): global inequality, excluding China, between individuals fell just slightly from 0.66 to 0.65 (2011 PPP) or 0.70 to 0.69 (2005 PPP). And results for 2015 indicate that even these modest reductions in global inequality may be slowing down (and might even reverse as there are indications that inequality between countries may be increasing if China is excluded). This point about the dominance of China in global inequality has been made previously by various scholars.[15]

A final point to note here is that global within country inequality has hardly changed since 1990, with a Gini remaining stubbornly at slightly below 0.4. In effect, this implies that, as between country inequality has fallen, within country inequality has become a larger contributor proportionately to total global inequality.

In sum, the choice of PPPs used makes some difference to measures of global inequality, largely because the 2011 PPPs have moved populations of some large and emerging economies even closer to the centre of the global distribution. However these apparent improvements need to be treated with circumspection. The levels of global inequality are still high (comparable to the inequality levels found in South Africa) and trends without China show global inequality barely falling between 1990 and 2012, irrespective of whether 2005 PPP or 2011 PPP are used. Also notable, although not impacted by PPP changes, is just how little global inequality measured as aggregate within country inequality changed between 1990 and 2012.

Figure 5

Figure 6

**3d. Poverty and the distribution of absolute consumption**

Overall this indicates that, despite some notable increases in the estimated consumption levels in some of the more populous emerging and developing economies, when one considers the global consumption distribution in its entirety, the difference between use of 2005 PPP and 2011 PPP may be rather less than first appears to be the case. Plots of the global consumption distribution curves show (Figures 7 and 8) that the world is still divided into a large number of people centered around a relatively poor population peak and a much smaller number of much richer people accounting for the global consumption peak. The 'twin peaks' world identified two decades ago by Quah does indeed appear to be disappearing as the 'middle' between the peaks fills out so that the clear demarcation between these peaks (the concavity in the richer tail of the population curve and in the poorer tail of the consumption curve) that existed at the end of the Cold War is no longer so readily discernible (this effect can be seen with both 2005 PPP and 2011 PPP).[16] With the 2011 PPP rates the extent of this 'filling' between the peaks does appear to be slightly stronger than with the 2005 PPP rates, as evidenced by how more of the additional consumption growth resulting from the PPP rates revision is concentrated in the region between the population peak and the consumption peak. However, the location of the consumption peak has not moved much relative to the global population,

occurring at the 95th population percentile throughout the period whether one uses 2005 or 2011 PPP. And the other differences arising in the consumption curves as a result of the PPP revisions are largely modest ones of degree rather than of substance.

Figure 7

Figure 8

The most obvious differences, arising in the distribution curves from the revised PPP rates, are in the population curves at the lower income levels (below a $5 a day poverty line in 2011PPP in Figures 7 and 8). As noted at the outset of this paper, one of the biggest and most contentious questions after each PPP revision is what has happened to estimates of global poverty. So, to be clear, in what follows we are not arguing for or against any specific poverty line. The point we are making is that global poverty headcounts are so hypersensitive to very modest changes, in either the value of the lower end 'poverty' lines or of the PPP rates used to determine the distribution curves, that when an individual monetary poverty line is considered in isolation (from other lines or other measures of poverty), it may not be an enlightening measure of real changes in the living conditions of the world's 'poor'.

The issue is illustrated in Figure 9 which focuses on the lower part of the population curve for 2012 using 2005 PPP and 2011 PPP. The area beneath each curve and to the left of the vertical poverty lines represents the poverty headcount. It can be seen that at the old $1.25 line the 2011 PPP headcount is much lower than the 2005 PPP headcount. But up at the $10 line the difference is relatively small. It is near the peaks of these curves, between the $1.90 and $5 a day lines, that a shift in the

poverty line or the PPP rates makes the greatest difference to absolute poverty numbers (a difference here of just 10 cents can add 100m people to poverty headcounts). But, since this region lies close to both the 2005 PPP and 2011 PPP population peaks, changes in the poverty line near here do not lead to dramatic differences in poverty headcounts (as a proportion of population) between the PPP rates. This is because the 2005 and 2011 PPP distribution curves are both similar heights in this region. However, as the line moves into the lower tails of the curves this height difference increases, both in absolute terms and proportionately. As a result, the old $1.25 line is well down into the region of the distribution curve where the differences between the 2005 PPP and 2011 PPP headcounts become most acute.

Figure 10 shows how the poverty headcounts diverge substantially with the old and new PPP rates at very low poverty lines (such as the old extreme poverty line of $1.25 2005 PPP which when inflated to 2011 values would be approximately $1.44 a day). But at slightly higher, and arguably more reasonable, poverty lines these differences between the old and new PPP rates quickly become much less significant. Over-attention to a single low poverty line headcount can therefore exaggerate the amount of change that has occurred with the move to 2011 PPP rates and can divert attention away from more intractable poverty issues that only become apparent by considering other poverty lines or by reflecting on the overall shape of the distribution curve.

Figure 9

Figure 10

For example, if one focuses on the number of people living at or below the peak of the distribution curve this has remained steady at about a third of the global population throughout the period 1990–2012 (near the 33rd percentile using 2011PPP and near the 37th percentile using 2005PPP), and thus a lot less has changed for the poorest than might be implied from the apparently dramatic way that the 2011 PPP rates halved the number of people living in extreme poverty around the world. We argue therefore that the updated PPP figures raise questions about the usefulness of focusing predominantly on any individual global poverty line. This is especially of concern for lines that are so low that they generate estimates of global poverty that are hypersensitive to minor changes at the lower tail of the global distribution, leading to headline-grabbing narratives of progress that can blind us to what is happening (or how little is happening) across the entire global distribution.

**3e. Poverty viewed across a range of poverty lines**

In view of these concerns, we suggest that it is important to consider poverty levels measured across a range of poverty lines – which raises the issue of what those lines should be. The 'official' global poverty line has recently been rebased to $1.90 in 2011PPP from $1.25 in 2005PPP.[17] As in previous adjustments, the logic of this is open to contention with the main concerns being about the rather limited and arbitrary choices made regarding comparisons to national poverty lines.[18]

Jolliffe and Prydz provide an interesting discussion of this revised international poverty line methodology and a new set of estimates of national poverty lines in 2011PPPs.[19] They note that the $1.90 poverty line is based on those same 15

countries that were used to estimate the $1.25 poverty line (which was the mean value of the national poverty lines of the world's poorest 15 countries with national poverty line estimates– not the actual 15 poorest countries - in 2005, on the basis that a global poverty line ought to be based on the world's poorest countries[20]). The national poverty lines of these countries, which on average date from the late 1990s, were inflated to 2011 values using national consumer price index (CPI) data. Jolliffe and Prydz observe that, Mali, for example, requires 22 years of CPI data to estimate its poverty line in 2011. However, in three of the 15 countries (Ghana, Malawi and Tajikistan), the CPI data was thought to be so questionable that household survey data was used to construct a new temporal deflator. If the national CPI had been used for those three countries it would have added 20 cents to the international poverty line, raising it to $2.10 and adding 200mn poor to global poverty counts (raising global poverty by approximately 20 per cent). [21]

In view of this sensitivity to minor changes in the poverty line value, an alternative to focusing disproportionately on the $1.90 poverty line would be to consider a range of poverty lines.[22] If one took the average poverty lines for all developing countries the international poverty line would be $2.50. Using the average for all countries would give a poverty line of $5 per day. The first of these, $2.50 is also approximately 50 per cent of global median consumption in 2012 and generates a comparable headcount to estimates of multi-dimensional poverty, a composite measure of ill-health, undernutrition, and years of schooling (1.6bn in 2010[23]), although those living in multi-dimensional poverty are not necessarily the same 1.6bn people. A limitation of the $2.50 line is that it is still in the region where poverty headcounts show maximum sensitivity to assumptions and measurement errors (cf. Figure 6). The second of these, $5 is close to global median consumption in 2012.

This would move the poverty line to a region much less sensitive to assumptions and measurement errors thereby making it a more reliable indicator of real progress in global well-being. Both this line and the $2.5 line also open the possibility that rather than measuring poverty in terms of headcounts it might be better to measure changes in median consumption or in consumption at a specified percentile of the global population.[24]

One further poverty line worth considering is the substantially higher line of $10-a-day that is associated with a permanent escape from poverty in longitudinal studies of Brazil, Mexico and Chile and Indonesia.[25] The $10 poverty line is a proposal for a 'security from poverty' consumption line developed and used by López-Calva and Ortiz-Juarez based on the probability of falling back below national poverty lines in the near future in Mexico, Brazil and Chile. One additional justification for considering a $10 line is that it is the consumption at the top of the poorest decile of population in OECD countries in 2012 (2011 PPP), which would mean it might qualify as a genuinely *global* poverty line.

We would argue that, rather than seeing these as measures of definable absolute poverty levels, or advocating that one of these lines should replace the $1.90 line, it would be best to view them as simply a range of consumption cut-off levels that can help us recognize what is happening across the poorest end of the global consumption distribution.

The relative sensitivity to changes in the PPP rates of poverty headcounts at different poverty lines is graphically illustrated in the lower end of the population distribution curves (Figures 5 and 6). Here, the most obvious difference in the distribution curves is the shift rightwards of the population curves when 2011 PPP rates are used. This accounts for the perception that the new rates lead to much lower

estimates of global extreme poverty. If one simply applies the old $1.25 a day line inflated to 2011 values (i.e. $1.44) it is estimated that the 2011 PPP rates halved global poverty headcounts, from just under 1 billion to 460 million. And using the higher line of $1.90, now established as the global extreme poverty line, global poverty headcounts appear to be around 880 million, so only slightly less than was the case with the old 2005 PPP rates and the $1.25 poverty line.

What is also notable about the 2011 and 2005 PPP distribution curves is how little difference there is in their shapes. The main effect of the 2011 PPP revisions seems to be little more than that the monetary values near the lower end of the curves have been increased somewhat (shunted rightwards). How little is changed by this is perhaps highlighted by the fact that, although the dollar-a-day value at which the population peak occurs increases (from $2.4 with 2005 PPP to $3.4 with 2011 PPP), the number of people living at or below the peak consumption level is little changed (2.5 billion below $2.4 2005 PPP; 2.3 billion below $3.4 2011 PPP).

In sum, debates over what value to adopt as a poverty line can make a significant difference to understandings of the scale of global poverty. If lower poverty lines are adopted then the world appears to have made some progress at reducing global extreme poverty with the remaining poverty becoming more (but certainly not exclusively) focused onto sub-Saharan Africa and LICs. If higher poverty lines are adopted (i.e. $1.9 a day or above 2011 PPP) then the focus is shifted both towards Asia and to poverty across all LICs and MICs *including* UMICs.

While the poverty count at $1.90 is 'only' approximately 900m people, as much as half of the world's population lives below $5 per day, and two-thirds live below $10 a day. Furthermore, the number of people living below $10 a day has increased since 1990 (Figure 11) and while this number may have stabilized over the

last decade that is solely due to the impact of China's rapid growth. When China is removed the numbers below $10 a day - the population potentially at risk of sliding back into poverty - are rising steadily (Figure 12). The picture is arguably even less optimistic when one looks at the size of the poverty gap. Eradicating poverty at the lowest levels ($1.90) where the poverty gap is just 0.3% of global GDP, but at the $5 line the gap is already ten times higher (Figure 13).

Figure 11

Figure 12

Figure 13

Figure 14

In sum, what seems like a dramatic change at the bottom of the global distribution is largely a consequence of the PPP revisions. This occurs primarily as simply a consequence of rebasing the ICP measurements rather than from any substantial difference, arising from the ICP revisions, in our understanding of how the consumption levels of the poorest increased in the period from 1990. This is indicated most clearly in how little difference there is between the 2005 and 2011PPP growth incidence curves for 1990-2012 among the poorer half of the global population (see Figure 1). Consequently, the apparently sizeable shift among the poorest on the distribution curves (see Figure 7) is predominantly the outcome merely of rebasing (and so relocating on the graphs) the estimates of the initial and final absolute consumption levels of the poorest in both 1990 and 2012 as a result of the ICP changes, rather than an indication of any significant difference in our understanding

of how and by how much the poorest benefitted from global growth over that period. The PPP revisions have not really changed anything in our understanding of the basic picture of global poverty and the winners and losers from globalization since the Cold War at the lower end of the distribution. Arguably, the more notable change happens in the richest decile or quintile (see Figures 1-3). Here, the revised PPP rates have led to a sizeable increase, in both relative and absolute terms, in the share of global consumption growth accruing to these richest deciles (see Figure 3). They have not been 'left behind' in the (relative) distribution of global growth by as much as the 2005PPP rates would indicate (see Figure 1). Nevertheless, even with the higher growth rates that the 2011PPP rates imply, it still appears that consumption growth in the highest quintile has largely stalled since 2007 (see Figures 3 and 4).

## 4. CONCLUSIONS

In this paper we have made estimates for global poverty and global inequality, for the period 1990–2012, to assess how much difference the new PPP price data make to estimates and perceptions of global poverty and global inequality and who has benefitted from the era of globalization since the Cold War. At first sight it appears that the revisions have led to substantially lower estimates of global poverty and to an increased focus on sub-Saharan Africa and low income or the least developed country groups where extreme poverty persists.

An alternative interpretation we would argue is as follows: (i) that the poorest half of the global population have done slightly better than would be estimated using the old PPPs but that this is quite small in scale; (ii) of more significance is that the

top third of the global distribution have fared much better from globalization since 1990 than would be estimated using the old PPPs; (iii) levels of global inequality are slightly lower using the new data but are still high being comparable to the inequality levels found in South Africa, and global inequality trends without China show global inequality barely changed regardless of which price data is used; and (iv) global poverty headcounts are so hypersensitive to very modest changes in either the value of the lower end 'poverty' lines (a difference of 10 cents can add 100m people to poverty headcounts), or of the PPP price data used that individual poverty lines considered in isolation do not give a very meaningful measure of how many people are 'poor' nor of real changes in the living conditions of the world's 'poor'.

Finally, reviewing recent trends using the 2011PPP rates indicates that the global crash of 2007 was indeed a turning point since which there has been a marked change from longrun trends in consumption growth. Although global growth has continued, consumption growth among the richest 10 per cent of the global distribution (most of who live in OECD countries) has stalled entirely, and declined in the 2007-2012 period. For the poorest three-quarters of the world's population the crisis, at first look, appears to have been beneficial with consumption growth rates accelerating above longrun averages. However, this effect seems strongly confined to just the two large and rapidly growing economies of China and India. Elsewhere consumption growth across these poorer parts of the global distribution have remained largely in line with longrun growth rates, and for the poorest third of this population away from China and India their consumption growth rates fell well below longrun averages, at least in the 2007-2012 period.

**BIBLIOGRAPHY**

Alkire, S., J. Foster, S. Seth, M. Santos, J. Roche,and P. Ballon. “Multidimensional Poverty Measurement and Analysis: Chapter 1—Introduction.” OPHI Working Paper. Oxford: Oxford Poverty and Human Development Initiative, 2014. http://www.ophi.org.uk/wp-content/uploads/OPHIWP082_Ch1.pdf

Anand, S. and P. Segal. “What Do We Know About Global Income Inequality?” *Journal of Economic Literature* 46, no. 1 (2008): 57-94. doi: 10.1257/jel.46.1.57

Birdsall, N. and C. Meyer. “The Median Is the Message: A Good Enough Measure of Material Well-Being and Shared Development Progress.” *Global Policy,* 6 (2015): 343–357. doi:10.1111/1758-5899.12239

Chen, S. and M. Ravallion. “The Developing World Is Poorer Than We Thought, but No Less Successful in the Fight against Poverty.” *Quarterly Journal of Economics* 125, no. 4 (2010): 1577-625. doi: 10.1162/qjec.2010.125.4.1577

Deaton, A. “Measuring Development: Different Data, Different Conclusions.” Paper presented at the 8th AFD-EUDN Conference, Paris, December 1, 2010. https://www.princeton.edu/~deaton/downloads/deaton_different_data_different_conclusions_paris_2010.pdf

Deaton, A. “Measuring Poverty in a Growing World (or Measuring Growth in a Poor World).” *Review of Economics & Statistics* 87, no. 1 (2005): 1-19. doi: 10.1162/0034653053327612

Deaton, A. “Price Indexes, Inequality, and the Measurement of World Poverty.” *American Economic Review* 100, no. 1 (2010): 5-34. doi: 10.1257/aer.100.1.5

Deaton, A. and B. Aten. “Trying to Understand the PPPs in ICP 2011: Why Are the Results So Different?” NBER Working Paper No. 20244. Cambridge, MA: National Bureau of Economic Research, 2014. doi: 10.3386/w20244

Deaton, A. and O. Dupriez. “Purchasing Power Parity Exchange Rates for the Global Poor,” *American Economic Journal: Applied Economics* 3, no. 2 (2011): 137-66. doi: 10.1257/app.3.2.137

Deaton, A. and A. Heston. “Understanding PPPs and PPP-Based National Accounts,” *American Economic Journal: Macroeconomics* 2, no. 4 (2010): 1-35. doi: 10.1257/mac.2.4.1

Edward, P. and A. Sumner. “Estimating the Scale and Geography of Global Poverty Now and in the Future: How Much Difference Do Method and Assumptions Make?” *World Development* 58 (2014): 67-82. https://doi.org/10.1016/j.worlddev.2013.12.009

Edward, P. and A. Sumner. “The Future of Global Poverty in a Multi-Speed World: New Estimates of Scale and Location, 2010–2030.” CGD Working Paper No. 327. Washington, DC: Centre for Global Development, 2013. https://www.cgdev.org/publication/future-global-poverty-multi-speed-world-new-estimates-scale-and-location-2010%E2%80%932030

Edward, P. and A. Sumner. “The Geography of Inequality: Where and by How Much Has Income Distribution Changed since 1990?” CGD Working Paper No. 341. Washington, DC: Centre for Global Development, 2013. https://www.cgdev.org/publication/geography-inequality-where-and-how-much-has-income-distribution-changed-1990-working

Ferreira, F., S. Chen, A. Dabalen, Y. Dikhanov, N. Hamadeh, D. Jolliffe, A. Narayan et al. “A Global Count of the Extreme Poor in 2012: Data Issues, Methodology and Initial Results.” *The Journal of Economic Inequality* 14, no. 2 (2016): 141-72. doi:10.1007/s10888-016-9326-6

Jolliffe, D. and E. Prydz. “Estimating International Poverty Lines from Comparable National Thresholds.” Policy Research Working Paper Series No. 7606. Washington, DC: World Bank, 2016. http://documents.worldbank.org/curated/en/837051468184454513/Estimating-international-poverty-lines-from-comparable-national-thresholds

Jolliffe, D. and E. Prydz. “Global Poverty Goals and Prices: How Purchasing Power Parity Matters.” Policy Research Working Paper Series No. 7256. Washington, DC: World Bank, 2015. http://documents.worldbank.org/curated/en/274691467991957918/Global-poverty-goals-and-prices-how-purchasing-power-parity-matters

Klasen, S. “Levels and Trends in Absolute Poverty in the World: What We Know and What We Don’t.” Paper presented at the International Association for Research in Income and Wealth, St. Gallen, Switzerland, August 22-28, 2010. http://hdl.handle.net/10419/90562

Lahoti, A., A. Jayadev and S. Reddy. “The Global Consumption and Income Project (GCIP): An Introduction and Preliminary Findings.” Accessed October 12, 2017. http://gcip.info/media/GCIPLaunchDraftPres2.pdf

López-Calva, L. and E. Ortiz-Juarez. “A Vulnerability Approach to the Definition of the Middle Class.” *The Journal of Economic Inequality* 12, no. 1 (2014): 23-47. doi: 10.1007/s10888-012-9240-5

Milanovic, B. “Global Inequality Recalculated: The Effect of New 2005 PPP Estimates on Global Inequality.” Policy Research Working Paper Series No. 5061. Washington, DC: World Bank, 2009. http://hdl.handle.net/10986/4252

Niño-Zarazúa, M., L. Roope, and F. Tarp. “Global Interpersonal Inequality: Trends and Measurement.” WIDER Working Paper 2014/004. Helsinki: United Nations University World Institute for Development Economics Research, 2014. https://www.wider.unu.edu/publication/global-interpersonal-inequality

Quah, D. T. “Twin Peaks: Growth and Convergence in Models of Distribution Dynamics.” *The Economic Journal* 106, no. 437 (1996): 1045-55.

Ravallion, M. “How Not to Count the Poor? A Reply to Reddy and Pogge.” In *Debates on the Measurement of Poverty*, edited by S. Anand, P. Segal, and J. E. Stiglitz, 86-101. Oxford: Oxford University Press, 2008.

Ravallion, M., S. Chen and P. Sangraula. “Dollar a Day Revisited.” Policy Research Working Paper Series No. 4620. Washington, DC: World Bank, 2008. http://hdl.handle.net/10986/4499

Reddy, S. and T. Pogge. “How Not to Count the Poor (Version 6.2).” Accessed October 12, 2017. http://pdf.wri.org/ref/reddy_03_how_not_to.pdf

Sumner, A., A. Yusuf and Y. Suara. “The Prospects of the Poor: A Set of Poverty Measures Based on the Probability of Remaining Poor (or Not) in Indonesia.” WoPEDS (Working Papers in Economics and Development Studies) Working Paper Series No. 201410. Bandung: Department of Economics, Padjadjaran University, Indonesia, 2014. http://ceds.feb.unpad.ac.id/wopeds/201410.pdf

**Table 1 Survey, HFCE and GDP totals ($ billions), 2011 PPP and 2005 PPP**

| | Consumption (survey means) | GDP | | | HFCE | | |
|---|---|---|---|---|---|---|---|
| | Countries in GrIP | Countries in GrIP | Global total | GrIP coverage | Countries in GrIP | Global total | GrIP coverage |
| 2011 PPP | | | | | | | |
| 1990 | 19,133 | 45,648 | 46,893 | 97.3% | 25,464 | 25,047 | 101.7% |
| 2012 | 36,006 | 96,107 | 97,602 | 98.4% | 51,275 | 51,538 | 99.5% |
| 2015 | 38,133 | 103,664 | 107,277 | 96.6% | 54,373 | 55,790 | 97.5% |
| Change 1990-2012 | 16,873 | 50,459 | 50,709 | | 25,812 | 26,491 | |
| Change (as % of 2012) | 46.9% | 52.5% | 52.0% | | 50.3% | 51.4% | |
| 2005 PPP | | | | | | | |
| 1990 | 15,786 | 35,537 | 36,270 | 98.0% | 19,446 | 19,633 | 99.0% |
| 2012 | 27,312 | 71,031 | 73,251 | 97.0% | 38,046 | 38,824 | 98.0% |
| Change 1990-2012 | 11,526 | 35,494 | 36,981 | | 18,600 | 19,190 | |
| Change (as % of 2012) | 42.6% | 50.0% | 50.5% | | 48.9% | 49.4% | |

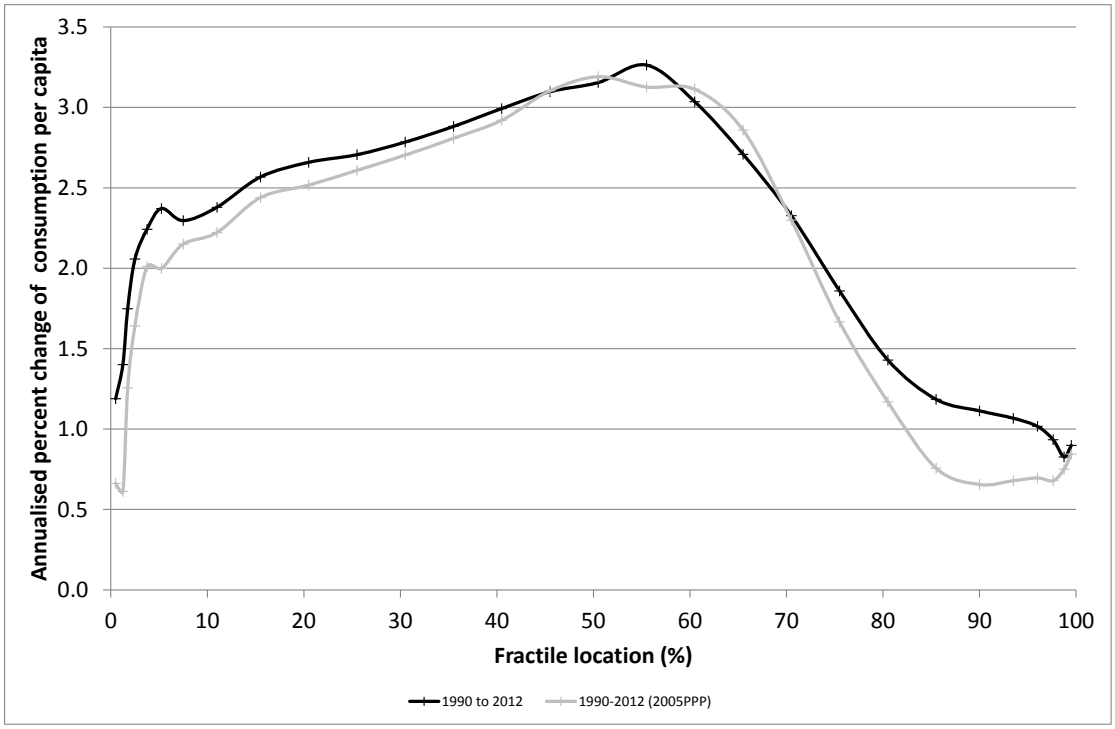
*Source*: Authors' estimates based on GrIP v2.1.

**Table 2 Household final consumption expenditure, 2012, 2005 PPP versus 2011 PPP**

| | | Change 2011 PPP to inflated 2005 PPP (%) | HFCE ($ billions) in 2012 | | |
|---|---|---|---|---|---|
| | | | In 2011 PPP | 2005 PPP inflated to 2011 | In 2005 PPP |
| **World** | | 18.7 | 51,538 | 43,410 | 38,824 |
| | | | | | |
| East Asia and Pacific (EAP) | | 26.8 | 12,364 | 9,750 | 8,720 |
| Europe and Central Asia (ECA) | | 11.7 | 13,217 | 11,832 | 10,582 |
| Latin America & Caribbean (LAC) | | 19.1 | 5,155 | 4,329 | 3,872 |
| Middle East & North Africa (MNA) | | 54.5 | 2,886 | 1,868 | 1,671* |
| North America (NAM) | | -0.3 | 11,631 | 11,666 | 10,434 |
| South Asia Region (SAR) | | 42.4 | 4,574 | 3,212 | 2,873 |
| Sub-Saharan Africa (SSA) | | 73.6 | 1,811 | 1,043 | 933 |
| E Asia excl. China | | | | | |
| S Asia excl. India | | | | | |
| | | | | | |
| **Population 100m or more (2012)** | | | | | |
| China | 1,351 | 34.7 | 4,954 | 3,677 | 3,289 |
| India | 1,264 | 34.5 | 3,453 | 2,567 | 2,296 |
| United States | 314 | 0.0 | 10,845 | 10,845 | 9,700 |
| Indonesia | 248 | 70.1 | 1,119 | 658 | 588 |
| Brazil | 202 | 26.4 | 1,645 | 1,301 | 1,164 |
| Pakistan | 177 | 86.6 | 613 | 329 | 294 |
| Nigeria | 168 | 218.2 | 524 | 165 | 147 |
| Bangladesh | 155 | 63.9 | 285 | 174 | 156 |
| Russia | 143 | 33.8 | 1,933 | 1,444 | 1,291 |
| Japan | 128 | 3.6 | 2,504 | 2,416 | 2,161 |
| Mexico | 122 | 1.1 | 1,132 | 1,120 | 1,001 |
| Philippines | 96 | 52.1 | 403 | 265 | 237 |

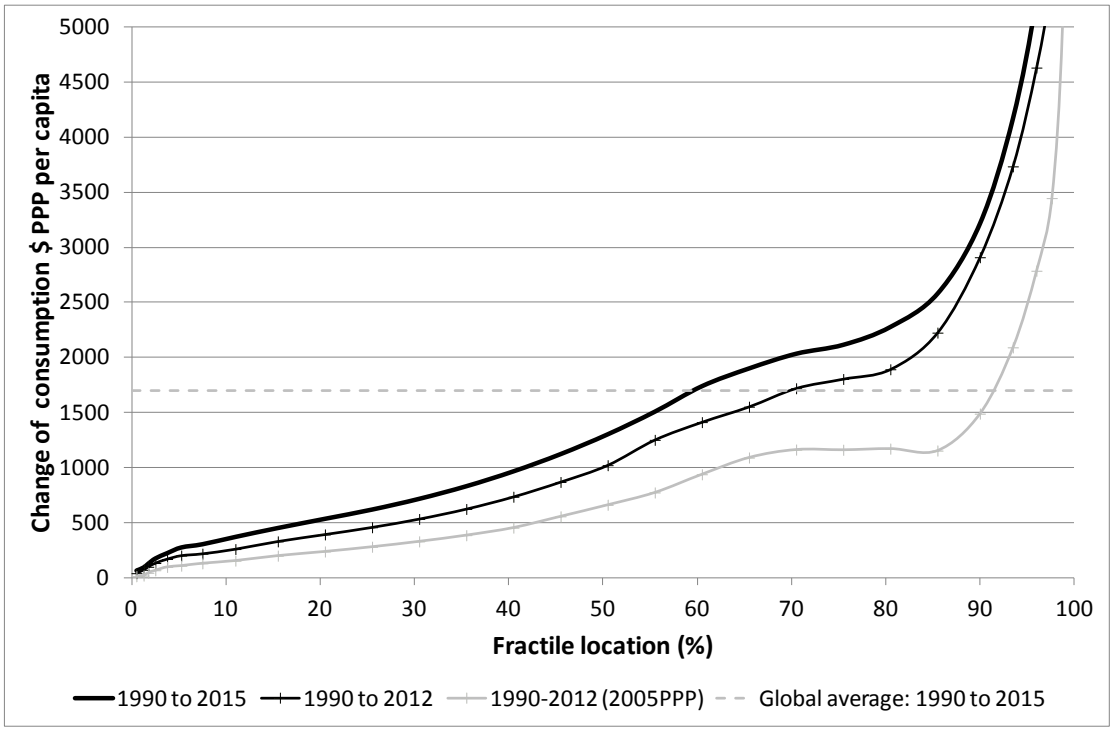
*Notes*:
To maximize consistency with WDI HFCE data, the inflator used is the value implicit in the USA HFCE data in WDI. This is slightly less than the inflator that would be estimated from US CPI for the same period (1.118 compared to 1.152).
*: These figures for 2012 HFCE in 2005 PPP are not provided in the relevant WDI so are estimated from the most recent 2005PPP source data (2011 for MNA) scaled pro rata to growth in GDP.
*Sources*: World Development Indicators, 18 Dec 2013 and 14 Oct 2016.

**Figure 1 Comparison of PPP effects: Annualised global growth incidence curve, survey means, 1990-2012 (2011 PPP unless stated)**



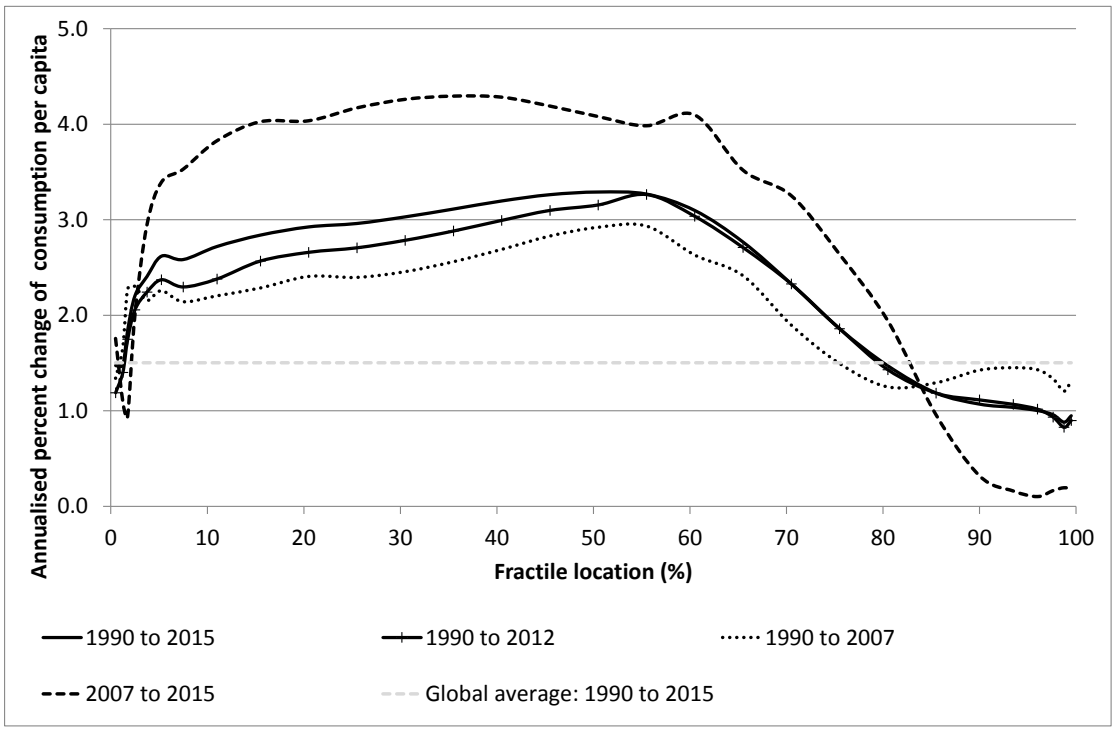

Source: Authors' estimates based on GrIP v2.1.

**Figure 2 Absolute benefits: Global growth incidence curve, survey means, 1990–2015 (2011 PPP unless stated)**



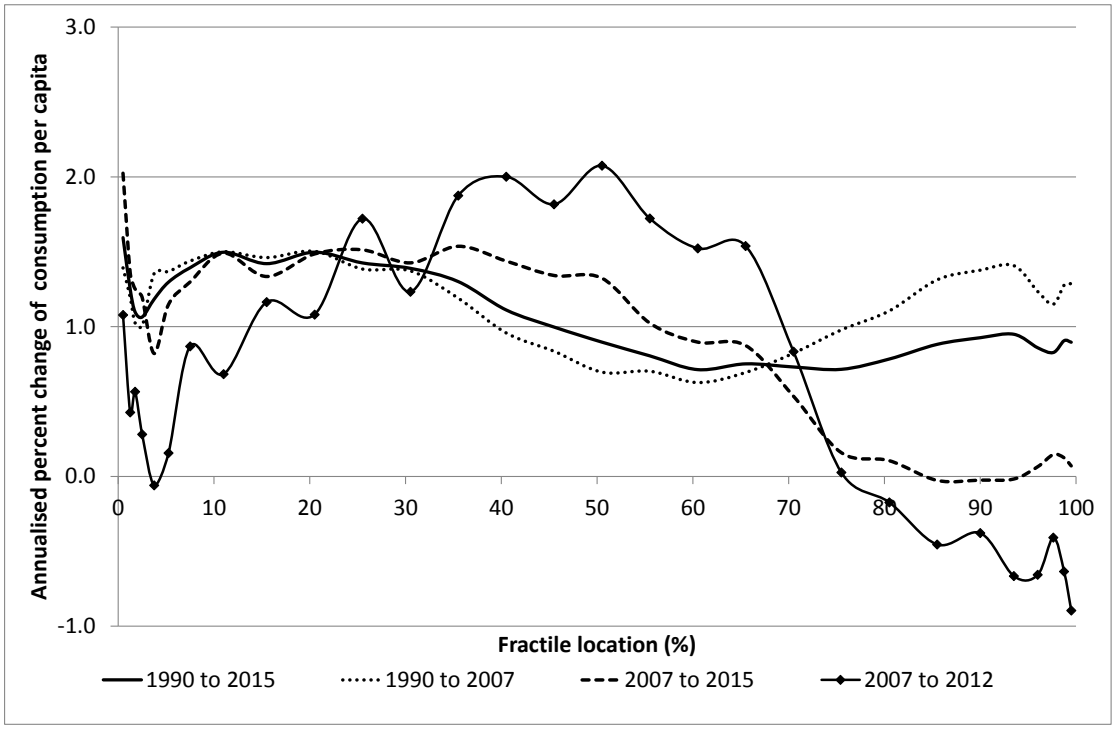

Source: Authors' estimates based on GrIP v2.1.

**Figure 3 Relative benefits: Annualised global growth incidence curve, survey means, 1990-2015 (2011 PPP)**



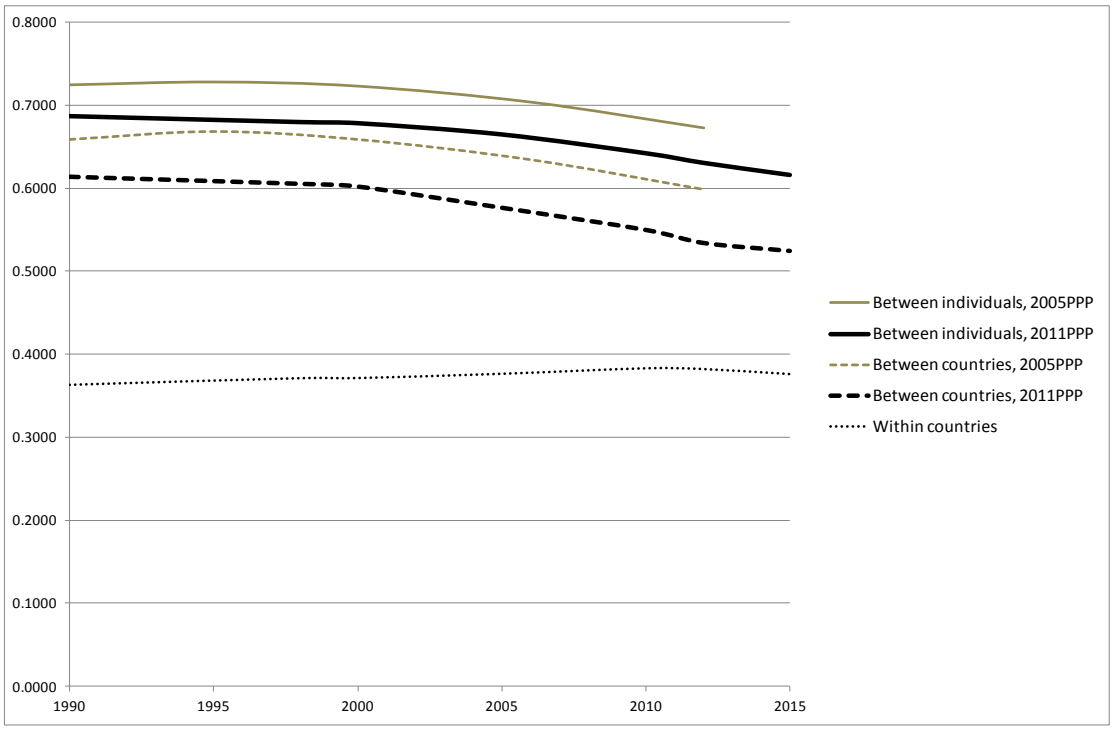

Source: Authors' estimates based on GrIP v2.1.

**Figure 4 Relative benefits: Annualised growth incidence curve (world excluding China and India), survey means, 1990-2015 (2011 PPP)**



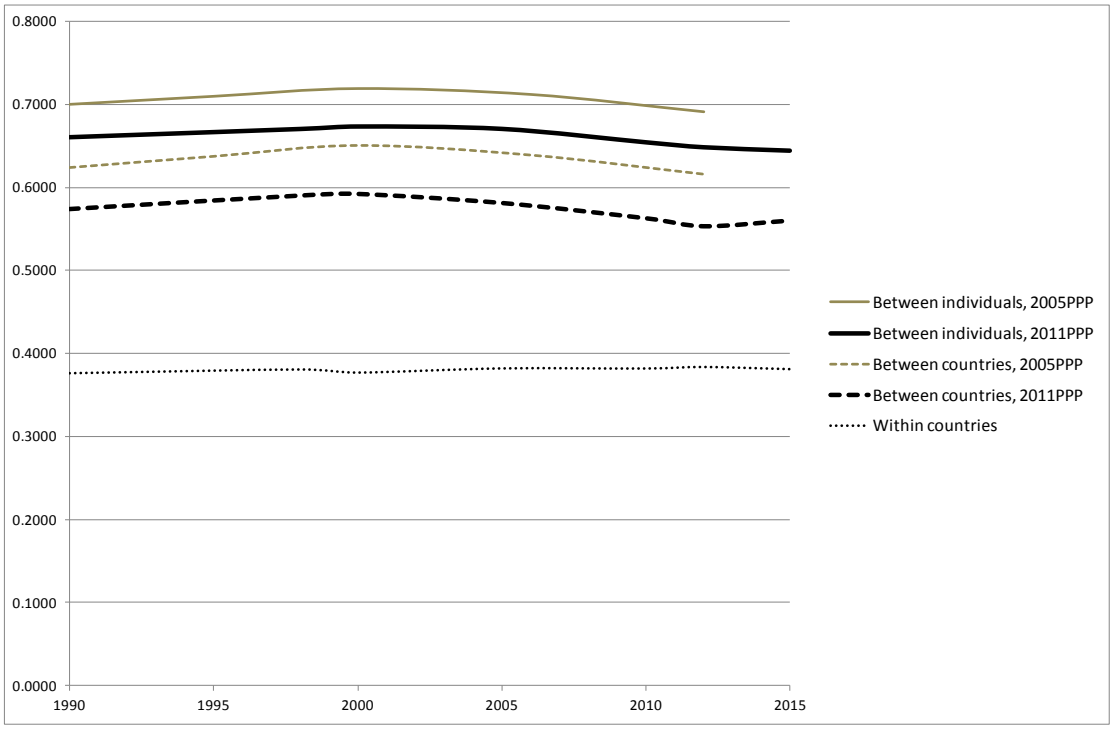

Source: Authors' estimates based on GrIP v2.1.

**Figure 5 Effect of PPP rates on evolution of global Ginis**



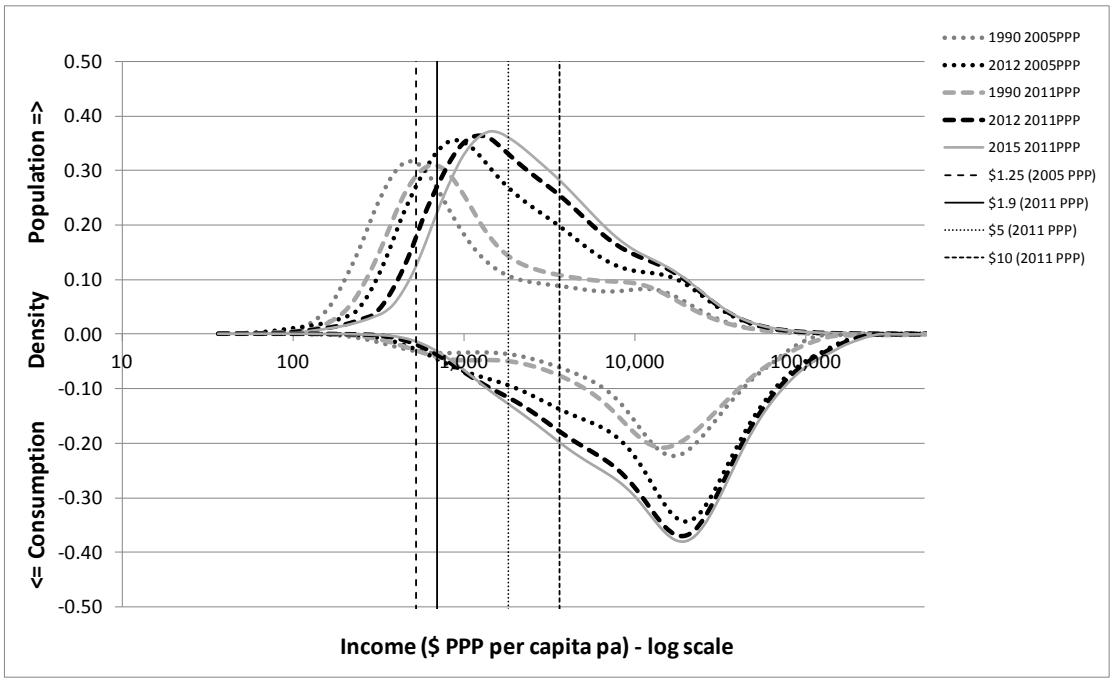

Source: Authors' estimates based on GrIP v2.1.

**Figure 6 Effect of PPP rates on evolution of global Ginis (excluding China)**



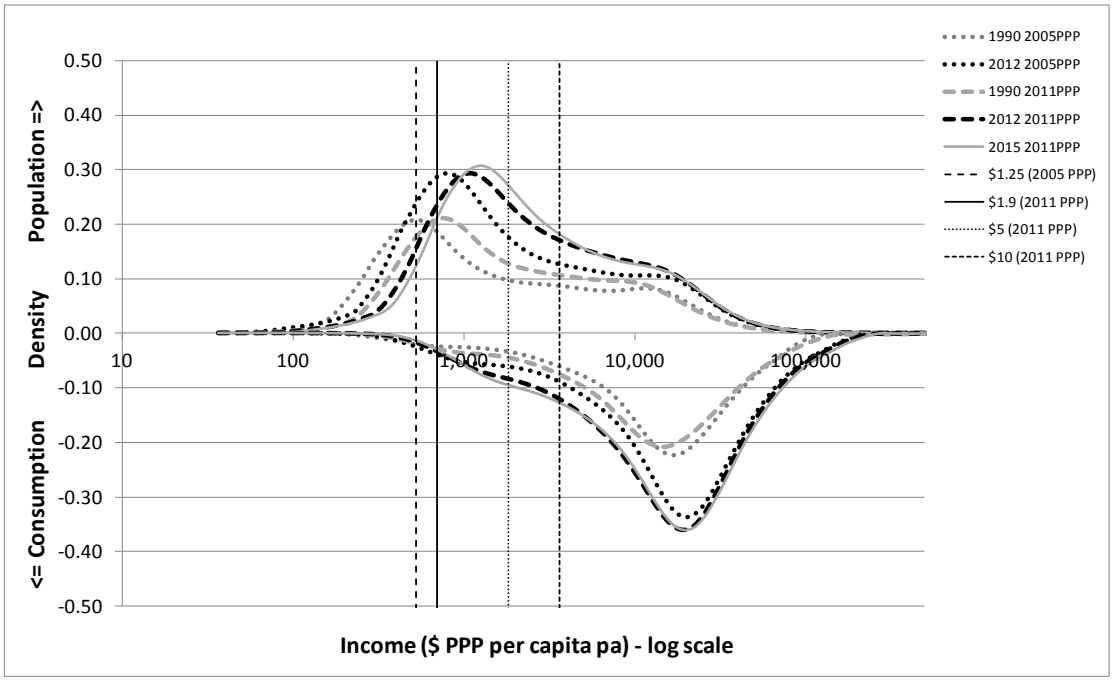

Source: Authors' estimates based on GrIP v2.1.

**Figure 7 Global distribution curve, 1990 and 2012 by 2005 and 2011 PPPs**



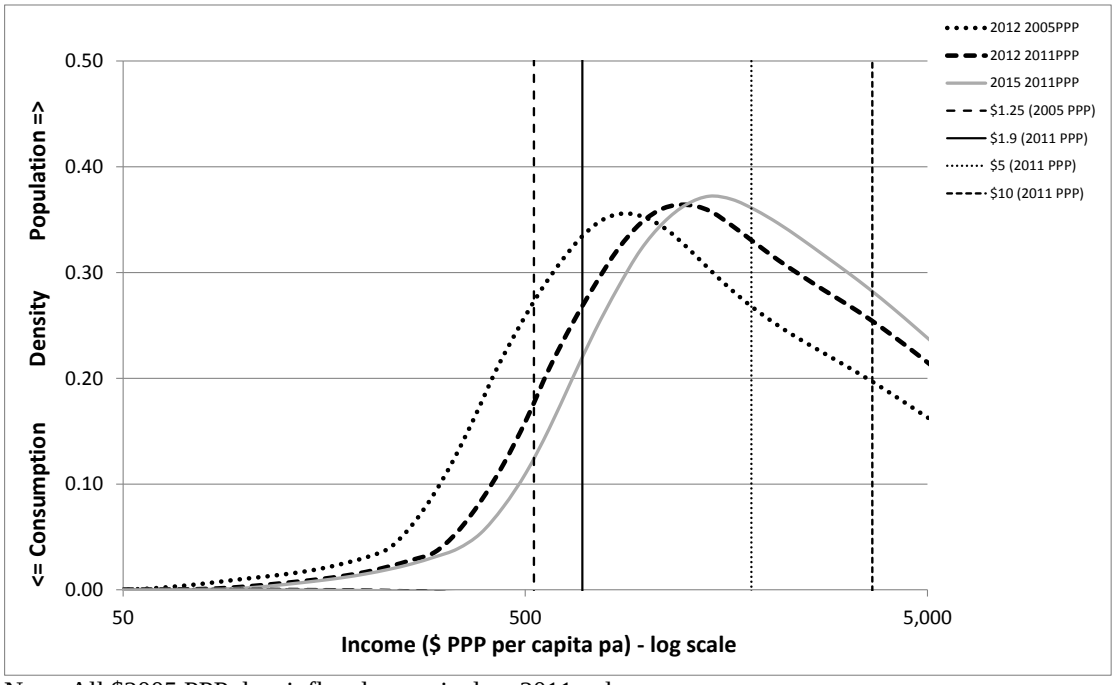

Note: All $2005 PPP data inflated to equivalent 2011 values.
Source: Authors' estimates based on GrIP v2.1.

**Figure 8 Global distribution curve without China, 1990 and 2012 by 2005 and 2011 PPPs**



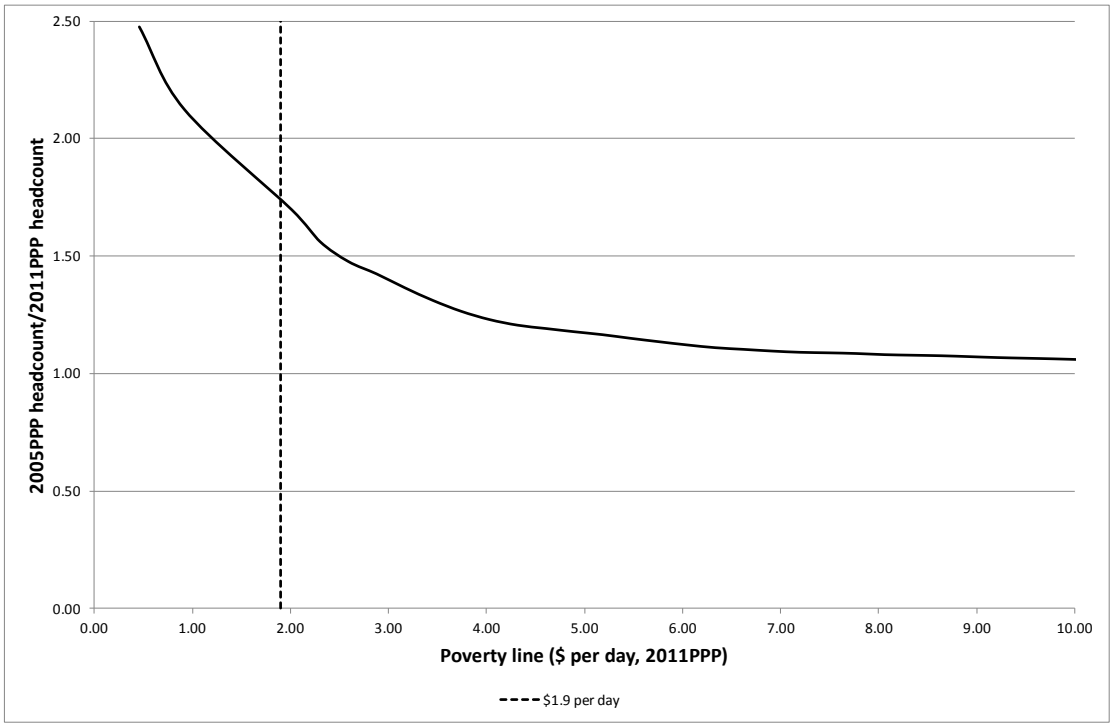

Note: All $2005 PPP data inflated to equivalent 2011 values.
Source: Authors' estimates based on GrIP v2.1.

**Figure 9 Global population distribution curve (detail), 2012 by 2005 and 2011 PPPs**



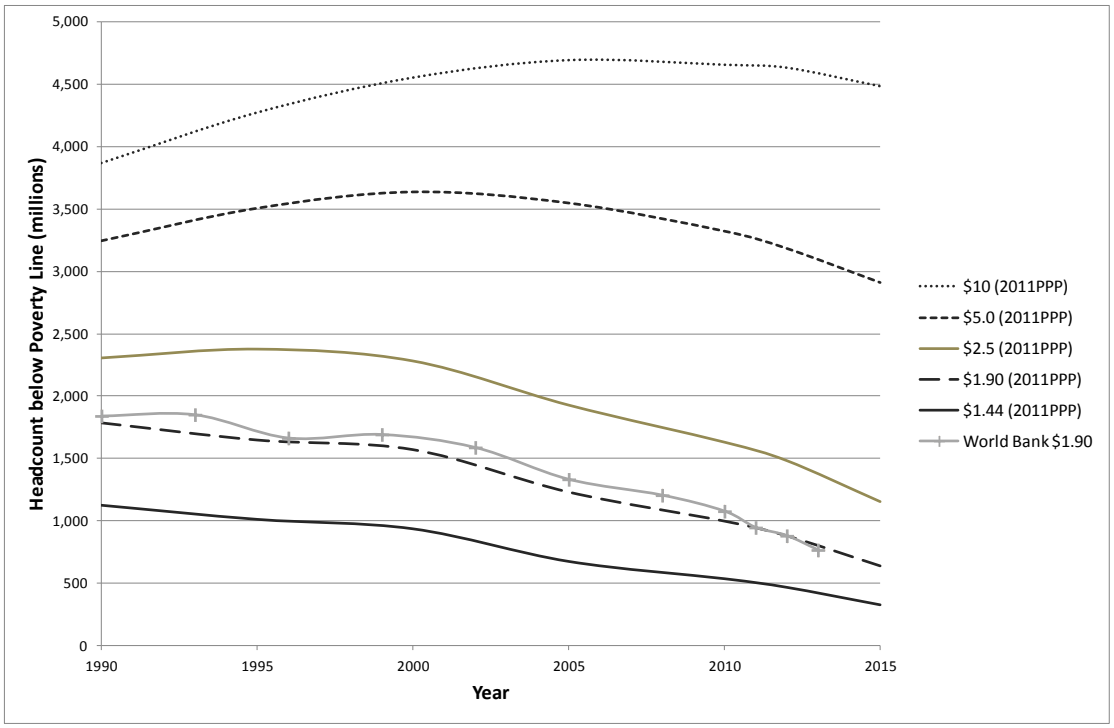

Note: All $2005 PPP data inflated to equivalent 2011 values.
Source: Authors' estimates based on GrIP v2.1.

**Figure 10 Ratio of 2005 PPP to 2011 PPP poverty headcounts at different poverty lines**



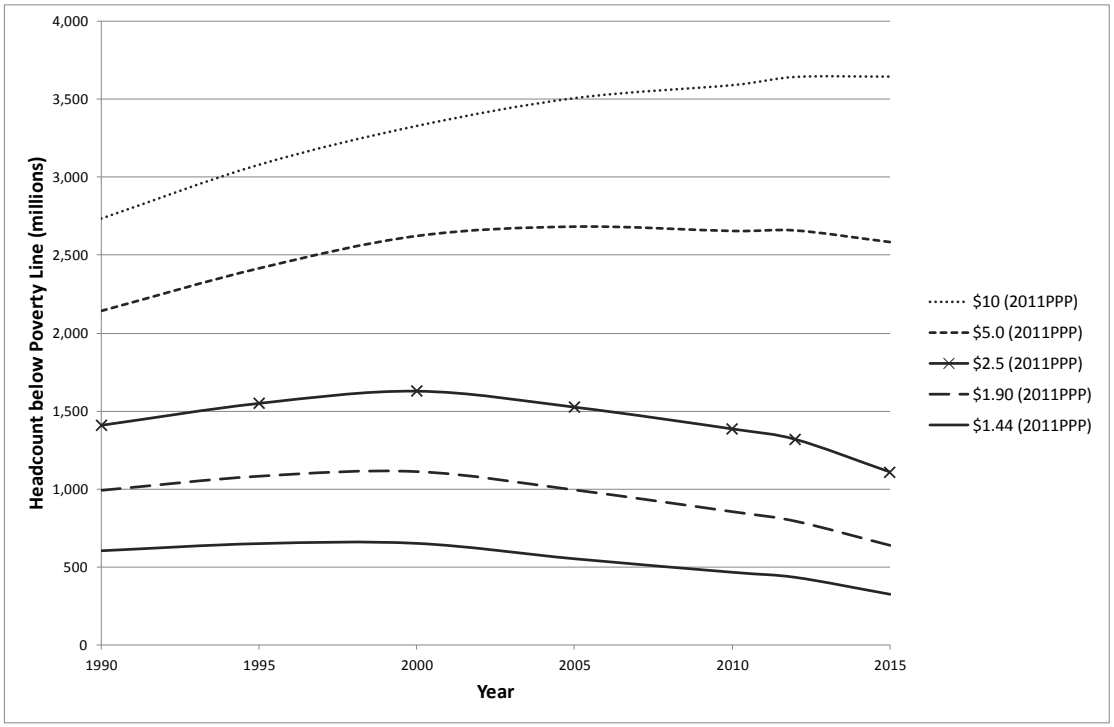

Note: When applied to 2005PPP data, poverty lines were adjusted appropriately to account for inflation.
Source: Authors' estimates based on GrIP v2.1.

**Figure 11 Estimates of global poverty at various poverty lines, millions, 1990–2012 using 2011 PPP**



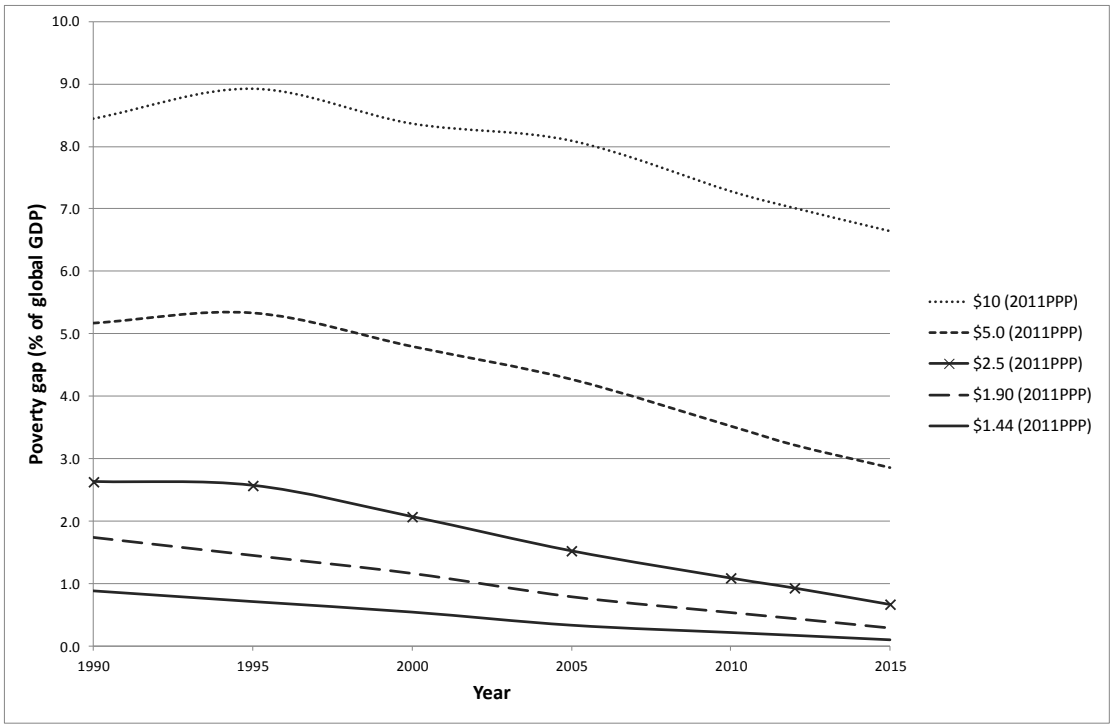

Note: $1.44 a day line is the $1.25 a day 2005 PPP line inflated to its 2011 value; 'World Bank $1.90' = 'official' global poverty estimates of the World Bank.
Source: Authors' estimates based on GrIP v2.1.

**Figure 12 Estimates of global poverty excluding China at various poverty lines, millions, 1990–2012 using 2011 PPP**



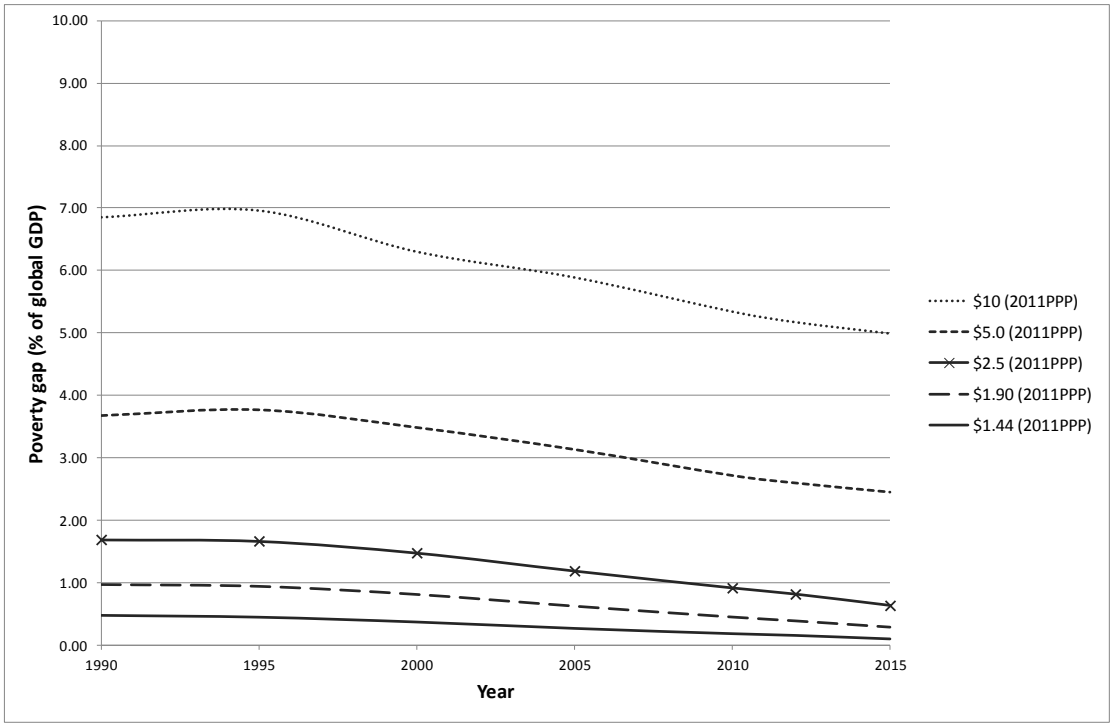

Note: $1.44 a day line is the $1.25 a day 2005 PPP line inflated to its 2011 value.
Source: Authors' estimates based on GrIP v2.1.

**Figure 13 Estimates of global poverty gap (as a % of global GDP) at various poverty lines, 1990–2012**




Note: $1.44 a day line is the $1.25 a day 2005 PPP line inflated to its 2011 value.
Source: Authors' estimates based on GrIP v2.1.

**Figure 14. Estimates of global poverty gap excluding China (as a % of global GDP) at various poverty lines, 1990–2012**




Note: $1.44 a day line is the $1.25 a day 2005 PPP line inflated to its 2011 value.
Source: Authors' estimates based on GrIP v2.1.

## NOTES

[1] The rebasing of the official global poverty line from 2005 to 2011 PPP in Ferreira, Chen and Dabalen, "Global Count of the Extreme Poor" (and preceded by Jolliffe and Prydz, "Estimating International Poverty Lines") has passed with just one critical examination so far - Reddy and Lahoti, "$1.90" - and one technical paper on the PPP methodology - Inklaar and Rao, "Cross-country Income Levels."
[2] Deaton and Dupriez "PPP Exchange Rates" constructed new PPPs for consumption near the poverty line using 2005 PPPs and found that there was little difference between PPPs for the consumption of the 'poor' and PPPs based on national accounts using the ICP 2005.
[3] See, for discussion: Anand and Segal, "Global Distribution of Income"; Chen and Ravallion, "Developing World is Poorer"; Deaton, "Measuring Poverty", "Prices Indices" and "Measuring Development"; Deaton and Heston, "Understanding PPPS"; Deaton and Dupriez, "PPP Exchange Rates"; Edward and Sumner, "Future of Global Poverty", "Geography of Inequality" and "Estimating the Scale of Poverty"; Klasen, "Levels and Trends"; Milanovic, "Global Inequality Recalculated"; and Ravallion, Chan and Sangraula, "Dollar a Day Revisited."
[4] Deaton and Aten, "Trying to Understand the PPPs," 1.
[5] Ibid., 18.
[6] Deaton and Aten, "Trying to Understand the PPPs," 6. Others concur, for example Inklaar and Rao, "Cross-country Income Levels," but Ravallion, "Exploration of the ICP's" questions this thesis.
[7] Deaton and Aten, "Trying to Understand the PPPs," 15.
[8] Ibid.
[9] Ibid., 27. Notably, the 2011 PPP data collection did make better efforts to ensure adequate cover of rural and urban areas.
[10] Deaton, "Price indexes, inequality," 31.
[11] A full description of the dataset is contained within Edward and Sumner, "Estimating the Scale of Poverty." The dataset was previously developed in Edward, "Examining Inequality", and then updated and expanded in Edward and Sumner, "Future of Global Poverty" and "Geography of Inequality."
[12] The most recent data published in WDI using the old 2005 PPP rates was for 2012. So we focus on 2012 as the most recent year for direct comparisons.
[13] Because surveys of national distributions are often only made several years apart, the analysis to 2012 may be more representative than that to 2015.
[14] This would not be the case for the within-country component of the Theil T, because that is an income or consumption-weighted average of within-country inequalities.
[15] For example, Niño-Zarazúa, Roope and Tarp "Global Interpersonal Inequality" provide a detailed discussion on the impact of China and India on global inequality.
[16] Quah, "Twin Peaks."
[17] Ferreira, Chen and Dabalen, "Global Count of the Extreme Poor"; Jolliffe and Prydz, "Estimating International Poverty Lines."
[18] Reddy and Lahoti, "$1.90." For historic commentary see also: Reddy and Pogge "How Not to Count the Poor" and Ravallion, "Reply to Reddy and Pogge."
[19] Jolliffe and Prydz, "Estimating International Poverty Lines," 4.
[20] Ravallion, Chan and Sangraula, "Dollar a Day Revisited."
[21] Jolliffe and Prydz, "Estimating International Poverty Lines." They propose a new dataset of estimates for national poverty lines in 2011PPP by inferring national poverty lines from the poverty rate to estimate national poverty lines.
[22] Various people, including many of the World Bank staff cited in this section have suggested multiple poverty lines are required and the World Bank has had two poverty lines though the higher line is little used.
[23] Alkire et al., "Multidimensional Poverty Measurement."
[24] Birdsall and Meyer, "Median is the Message."
[25] For Latin America: López-Calva and Ortiz-Juarez, "Vulnerability approach." For Indonesia: Sumner, Yusuf and Suara, "Prospects of the Poor."